

REMARKS/ARGUMENTS

By this Amendment, claims 17, 31 and 32 are amended and claims 22-23, 30 and 36 are canceled. Claims 17, 27-28 and 31-35 are pending.

Favorable reconsideration is respectfully requested in view of the foregoing amendments and the following remarks.

Claim Amendments

Support for the foregoing amendments is found in the dependent claims and in the specification as follows:

Claim	Limitation	Support
17	a flexible compartment layer of silicon rubber	page 7, lines 1-4
17	thickness from 0.5 mm to 4 mm.	page 14, second paragraph
17	reservoirs with a sample volume from 1 nl to 10 μ l	page 9, second paragraph
17	variations of positions of the sample reservoirs in a direction perpendicular to a base plane are less than 250 μ m over an entire surface of the base	page 11, second paragraph

Obviousness Rejection

Claims 17-21, 22-23 and 29-36 stand rejected under 35 U.S.C. § 103(a) as allegedly being obvious over U.S. Patent No. 4,299,920 to Peters in view of U.S. Patent No. 4,441,793 to Elkins and further in view of U.S. Patent No. 6,645,434 to Muramatsu et al. This rejection is respectfully traversed.

Claim 17 has been amended to specify that the reaction substrate comprises a flexible compartment layer of silicon rubber with a thickness from 0.5 mm to 4 mm perforated by an arrangement of holes, wherein the flexible compartment layer adheres to the surface of a glass plate substrate without adhesive such that the holes provide sample reservoirs with a sample volume from 1 nl to 10 μ l, and variations of positions of the sample reservoirs in a direction perpendicular to a base plane are less than 250 μ m over an entire surface of the base. The reaction substrates according to the claimed invention are thus very well suited to use in testing procedures with high sample throughput (so-called high throughput screening, HTS) in biotechnical and/or chemical research and development, as among other advantages,

time-intensive readjusting, e.g. of microscope lenses, is not required in the z direction, perpendicular to the base.

The proposed combination of reference teachings fails to disclose or suggest these advantageous features of the claimed invention.

Peters discloses a receptacle for cell cultures or biological tests comprising a base plate (3) and a wall member (1) to form probe chambers (2) joined in detachable and liquid-tight manner to the base plate by adhesion. After being filled with the suspension of cells to be cultivated, a cover for the chambers (2) is optionally provided. It may fit loosely and be provided with vent studs and an overlapping edge, or it may be held to the wall section by adhesion and thus close the chambers (2) in the same way that the base plate (3) is closed on its underside (see column 3, lines 36 to 47). A cover with penetration openings for supplying samples to the chambers or for removing samples from the chambers is not shown. Peters teaches that the wall member can be silicon rubber (col. 2, lines 8-9), but does not disclose the thickness of the wall member or the volume of the probe chambers. Peters does not disclose that the variations of positions of the sample reservoirs in a direction perpendicular to the base plate are less than 250 μm over an entire surface of the base plate.

Elkins discloses an evaluation slide for viewing liquid specimens. The evaluation slide is shown in an exploded perspective in Fig. 3 and comprises three layers: a base layer (23), a wall layer (24) and a cover layer (25), with openings (17-22) laminated into a unitary slide. The base and the wall layers are laminated by conventional techniques including adhesive, heat or pressure (column 3, line 36-41), whereas the cover layer is permanently affixed to the side walls of the wall layer (column 1, lines 65-66). The use of silicon rubber in the wall layer is not disclosed. The thickness of the wall layer can be from 0.001-0.020 in. (0.025-0.51 mm). The volume of the sample chambers is not disclosed. Elkins does not disclose that the variations of positions of the sample reservoirs in a direction perpendicular to the base layer are less than 250 μm over an entire surface of the base layer.

Muramatsu discloses a sample observation plate including a glass plate as a transparent substrate, an adhesive and a crystalline thin film (col. 2, lines 10-13). Muramatsu discloses bonding without an adhesive only with regard to the crystalline film/substrate connection (Muramatsu claim 29). On the other hand, the hydrophilic polymer frame (Muramatsu Figures

4A, 4B) is bonded by polymerization or a coupling agent (col. 3, lines 20-25). In the first case, the frame cannot be separated from the substrate free of damage, while in the second case the coupling agent represents an adhesive, which is excluded from base claim 17.

Silicon resin is disclosed at col. 3, lines 18-19 of Muramatsu, but the use of silicon rubber as the thin film is not disclosed. Silicon rubber has the particular advantage of being capable of bonding to the glass plate and separating from the glass plate without damage.

Claim 30 of Muramatsu specifies that the crystalline sheet has a thickness of 0.05 mm or less (claim 30). The sample volume on the substrate is not disclosed.

Moreover, Muramatsu does not disclose that the variations of positions of the sample reservoirs in a direction perpendicular to the substrate are less than 250 μm over an entire surface of the substrate.

Thus, the combined teachings of Peters, Elkins and Muramatsu et al. fail to disclose or suggest the claimed reaction substrate comprising a flexible compartment layer of silicon rubber with a thickness from 0.5 mm to 4 mm perforated by an arrangement of holes, wherein the flexible compartment layer adheres to the surface of a glass plate substrate without adhesive such that the holes provide sample reservoirs with a sample volume from 1 nl to 10 μl , and variations of positions of the sample reservoirs in a direction perpendicular to a base plane are less than 250 μm over an entire surface of the base.

A person having ordinary skill in the art would not have been motivated to consult, combine and modify the teachings of the cited references, which do not relate to HTS techniques and apparatus, with a reasonable expectation of successfully producing a reaction substrate suitable for use in HTS.

Accordingly, reconsideration and withdrawal of the obviousness rejection of claims 17-21, 22-23 and 29-36 are respectfully requested.

Claims 27-28 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Peters, Elkins and Muramatsu et al. in view of U.S. Patent No. 6,037,168 to Brown. This rejection is respectfully traversed.

The combination of Peters, Elkins and Muramatsu et al. fails to make a prima facie case of obviousness for the reasons noted above. Regardless of whether or not Brown discloses

channels as asserted by the Examiner, it still does not remedy the aforementioned deficiencies of the other references to identically disclose each and every feature of the claimed invention.

In particular, Brown does not disclose or suggest the claimed reaction substrate comprising a flexible compartment layer of silicon rubber with a thickness from 0.5 mm to 4 mm perforated by an arrangement of holes, wherein the flexible compartment layer adheres to the surface of a glass plate substrate without adhesive such that the holes provide sample reservoirs with a sample volume from 1 nl to 10 μ l, and variations of positions of the sample reservoirs in a direction perpendicular to a base plane are less than 250 μ m over an entire surface of the base.

Moreover, as noted above, a person having ordinary skill in the art would not have been motivated to consult, combine and modify the teachings of the cited references, which do not relate to HTS techniques and apparatus, with a reasonable expectation of successfully producing a reaction substrate suitable for use in HTS.

Accordingly, reconsideration and withdrawal of the obviousness rejection of claims 27-28 are respectfully requested.

For at least the reasons set forth above, it is respectfully submitted that the above-identified application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are respectfully requested.

Should the Examiner believe that anything further is desirable in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,

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May 15, 2008

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